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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,532	10/23/2003	J. Rodney Walton	020573	2316

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Qualcomm Incorporated
Patents Department
5775 Morehouse Drive
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EXAMINER	
TSEGAYE, SABA	

ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/693,532	WALTON ET AL.	
	Examiner	Art Unit	
	Saba Tsegaye	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *07/13/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 21 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 21, line 1, the term "wherein transmission on the first random...for propagation delay" lacks antecedence basis.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4-11, 15, 16, 39 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Heide (US 5,677,909).

Regarding claims 1, 39 and 40, Heide discloses a method of accessing a wireless multiple-access communication system, comprising:

determining a current operating state of a terminal (the remote stations identify the RSYNC or MRSYNC frames which provides information within the INFO field relative to the number and type of slots) (column 7, lines 1-11);

selecting one random access channel from among at least two random access channels based on the current operating state (a non-contention based access protocol or a contention based access protocol) (column 7, line 25-column 8, line 27); and

transmitting a message on the selected random access channel to access the system (column 6, lines 1-17; column 8, lines 38-50).

Regarding claim 4, Heide discloses the method of claim 1, wherein the current operating state is indicative of whether or not the terminal has registered with the system (column 7, lines 58-67).

Regarding claims 5 and 16, Heide discloses the method of claim 1, wherein the current operating state is indicative of whether or not the terminal can compensate for propagation delay to an access point receiving the message (column 3, lines 1-5).

Regarding claim 6, Heide discloses the method wherein the current operating state is indicative of whether or not a particular received signal-to-noise ratio ISNRI is achieved for the terminal (column 6, lines40-45).

Regarding claim 7, Heide discloses the method, further comprising: retransmitting the message unit an acknowledgment is received for the message or a maximum number of access attempts has been exceeded (column 6, lines 27-31; column 9, lines 9-14).

Regarding claim 8, Heide discloses the method, further comprising: if access is not gained via the selected random access channel, transmitting another message on another random access channel selected from among the at least two random access channels (column 9, lines 20-36).

Regarding claim 9, Heide discloses the method of claim 1, wherein the transmitting includes

selecting a slot from among a plurality of slots available for the selected random access channel (column 7, lines 46-67), and

transmitting the message in the selected slot (column 8, lines 38-50).

Regarding claim 10, Heide discloses the method of claim 1, wherein the message includes an identifier for the terminal (column 5, lines 61-67).

Regarding claim 11, Heide discloses the method of claim 10, wherein the identifier is unique to the terminal (column 6, lines 1-4).

Regarding claim 15, Heide discloses a method of accessing a wireless multiple-access multiple-input multiple-output (M1MO) communication system, comprising:

determining whether a terminal is registered or unregistered with the system (column 7, lines 25-37);

if the terminal is registered, transmitting a first message on a first random access channel to access the system (column 7, lines 46-67); and

if the terminal is unregistered, transmitting a second message on a second random access channel to access the system (column 7, lines 37-46).

5. Claims 17-20 and 23-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Dupont (US 5,729,542).

Regarding claims 17 and 24, Dupont discloses, in Fig. 6, a method of facilitating random access in a wireless multiple-access communication system, comprising:

processing a first random access channel used by registered terminals to access the system (column 6, lines 56-60); and

processing a second random access channel used by registered and unregistered terminals to access the system (column 6, lines 56-60).

Regarding claim 18, Dupont discloses the method wherein the processing for each of the first and second random access channels includes detecting for presence of transmissions on the random access channel (column 6, line 45-column 7, line 26).

Regarding claim 19, Dupont discloses the method wherein the detecting is base on a pilot that is included in each transmission on the first and second random access channels (column 6, lines 3-11).

Regarding claim 20, Dupont discloses the method further comprising determining round trip delay for a terminal whose transmission is detected in the second random access channel (column 4, lines 20-29).

Regarding claim 23, Dupont discloses the method wherein the processing the second random access channel includes, detecting for presence of transmissions on the second random access channel by performing sliding correlation (column 6, lines 3-20).

Regarding claim 25, Dupont discloses the random access channel wherein transmissions on the first random access channel are compensated for propagation delay (column 4, lines 40-46; column 6, lines 18-34).

Regarding claim 26, Dupont discloses, in Fig. 6, the random access channel wherein the first (601) and second random (602) access channels are associated with first and second segments, respectively, in a frame (600).

Regarding claim 27, Dupont discloses, in Fig. 6, the random access channel wherein the first (601) and second (602) segments are configurable for each frame (column 6, lines 54-65).

Regarding claim 28, Dupont discloses, in Fig. 6, the random access channel wherein each of the first (601) and second (602) segments is divided into a plurality of slots.

Regarding claim 29, Dupont discloses the random access channel wherein the duration of each of plurality of slots for the second segment is defined to be longer than a largest expected round trip delay for terminals in the system (column 1, lines 33-40).

Regarding claims 30 and 31, Dupont discloses that the random access channel wherein the first and second random access channels are associated with first (601) and second (602) protocol data units (packets) respectively (column 6, lines 60-65).

Regarding claims 32-37, Dupont discloses that the random access channel wherein the first and second PDUs (packets) are associated with first (601) and second (602) reference portions, respectively (a packet is a transmission unit that consists binary digits representing both data and a header (message portion) containing an identification number, source and destination addresses and error control data).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dupont.

Dupont discloses all the claim limitations as stated above. Further, Dupont discloses, in Fig. 6, that access period 601 is for high priority users and access period 601 is for low priority users. However, Dupont does not expressly disclose the first and second PDUs are associated with different coding schemes. As known, channels, which are used for high priority users require more protection than the traffic channel used for low priority users.

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to use different coding schemes for the first and second PDUs in the system of Dupont. One ordinary skill in the art would have been motivated to do this because traffic channel which are used for high priority users need more effective codes that can provide the desired degree of error protection.

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heide.

Heide discloses all the claim limitations as stated above. Further, Heide discloses that in order for the remote stations to communicate with the central station, the remote stations must be able to gain access to the commonly shared communications channel using some type of multiple-access signaling or control protocol. However, Heide does not expressly disclose that the multiple-access communication system uses OFDM.

It would have been obvious to one ordinary skill in the art at the time the invention was made to use OFDM in the multiple-access signaling of Heide. One ordinary skill in the art would have been motivated to do this because using OFDM reduces multiple-access interference so that spectral efficiency and high data rate limits in a common wireless channel are increased.

9. Claims 2, 3 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heide in view or Dupont (US 5,729,542).

Hide discloses all the claim limitations as stated above except for a first random access channel used by registered terminal for system access and a second random access channel used by registered and unregistered terminal for system access.

Dupont teaches, in Fig. 6, that access channel 601 used for expedited access requests and access channel 602 used by both regular and expedited access requests (column 6, lines 56-60).

It would have been obvious to one ordinary skill in the art at the time the invention was made to implement the teaching of Dupont of using the first access channel by registered terminal and the second access channel by both registered and unregistered terminals in the apparatus for exchanging data between a central station and a plurality of remote stations of Heide. One of ordinary skill in the art would have been motivated to do this in order to reduce undesirable delays for the high priority traffic.

10. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heide in view of du Crest et al. (US 2004/0047292).

Heide discloses all the claim limitations as stated above. Further, Heide discloses that each of the stations is assigned a unique identification and further, suggested that a dynamic address determination procedure could also be used. However, Heide does not expressly disclose a common identifier used by unregistered terminals.

Crest teaches that when a traffic channel shared by more than one user terminal, an identifier can determine terminal by a temporary flow identity. This identifier survives only for the duration of the channel, i.e. it does not code for the user terminal uniquely

but is merely used to identification of messages to or from a particular user terminal for the time period of the respective channel transmission (0057).

It would have been obvious to one ordinary skill in the art at the time the invention was made to use the teachings from Crest of using a common identifier in the system of Heide. One of ordinary skill in the art would have been motivated to do this because using a common identifier allows reusing and sharing the same identifier.

11. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heide in view of Caldwell (US 2002/0122393).

Heide discloses all the claim limitations as stated above, except for multiple-access communication system supports terminal with multiple antennas.

Caldwell teaches in Fig. 1, a mobile terminal that comprises two antennas 12 and 26.

It would have been obvious to one ordinary skill in the art at the time the invention was made to use the teachings from Caldwell of using multiple antennas in the system of Heide. One of ordinary skill in the art would have been motivated to do this because multiple antennas allows the mobile terminals to measure the quality of signal reception by each of the two antennas and selects the one of the at least two antennas providing the better quality of signal reception.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Becker et al. (US 6,735,188) discloses a channel encoding and decoding method and apparatus.

Ngo (US 2004/0037257) discloses a method and apparatus for assuring quality of service in wireless local area networks.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saba Tsegaye whose telephone number is (571) 272-3091. The examiner can normally be reached on Monday-Friday (7:30-5:00), First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ST
August 8, 2004

JOHN PEZZLO
PRIMARY EXAMINER